# Summary of Water Conditions
# March 1, 2011

February was a month of contrasts. The first half was abnormally warm and dry. The second half was cold and wet, with late month storms producing snow in low foothill areas not used to seeing much of the white stuff. Precipitation statewide was near average for the month and the mountain snowpack registered about a 25 percent gain for the month, which was about the normal increment for February, yielding a pack which is still well above average for this time of the year. The large snowpack should provide most areas of California with decent water supplies this year.

***Forecasts*** of the median April through July runoff are about 110 percent of average compared to 90 percent last year at this time and an actual 125 percent of average runoff in 2010. Forecasted amounts are heavier in the southern Sierra. Water year forecasts are also about 110 percent of average statewide.

***Snowpack*** water content is about 125 percent of average for this date compared to 105 percent last year. The pack is 110 percent of the April 1 average, normally the date of maximum accumulation. Percentages are higher in the southern Sierra; least on the north coast.

***Precipitation*** from October through February was about 125 percent of average compared to 105 percent last year. February statewide precipitation was about 95 percent of average. Seasonal precipitation is heaviest in the south and ranges from 95 percent in the North Coast region to over 200 percent in the South Lahontan region.

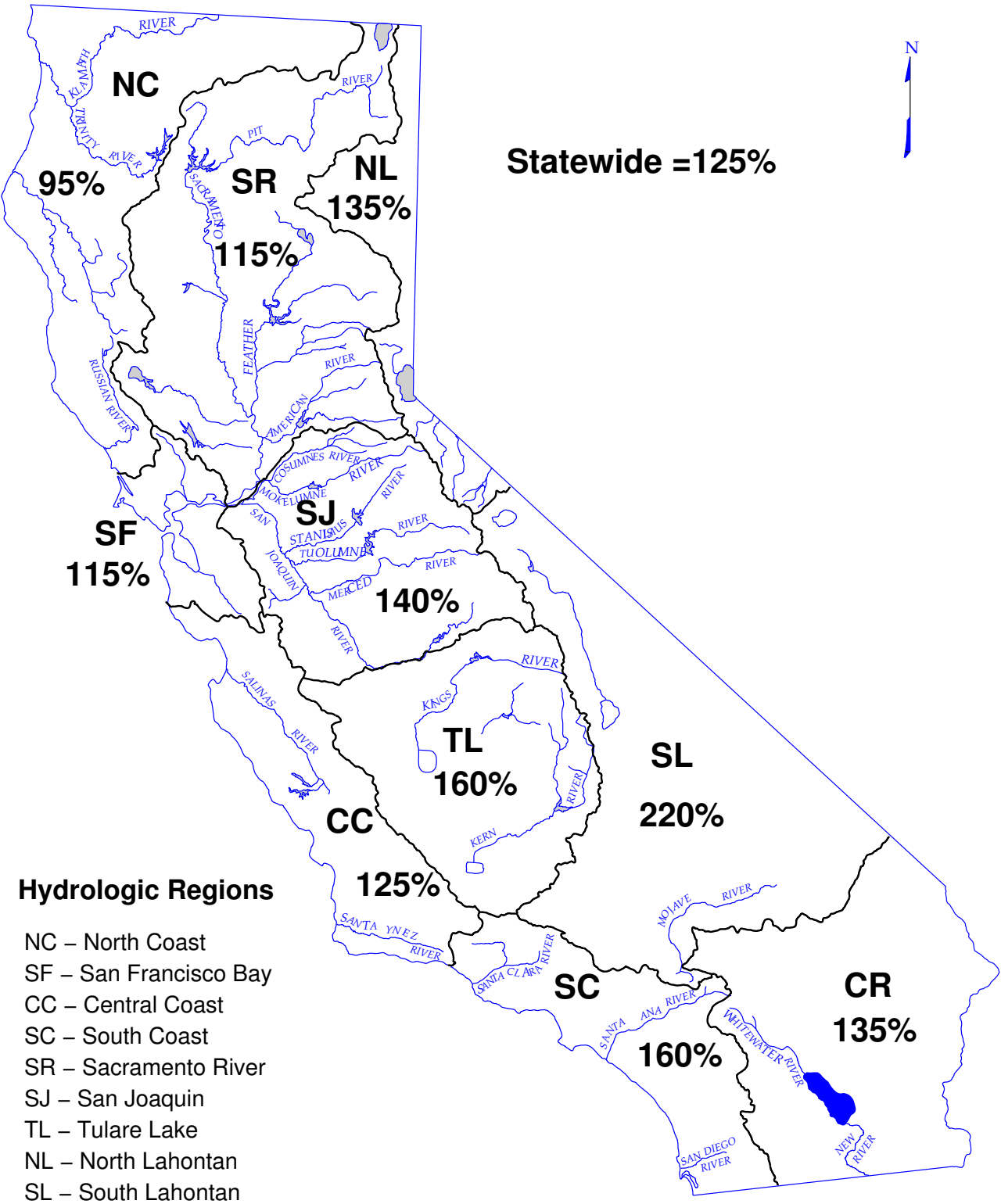
***Runoff*****,** held back because of the coldness of late February storms and a dry January, was only about 60 percent of average for the month. Seasonal runoff, due to the wet fall, is average at 100 percent. Estimated runoff of the eight major rivers of the Sacramento and San Joaquin river region in February was 1.93 million acre-feet

***Reservoir storage*** continues above average at about 110 percent of average compared to 85 percent one year ago. Some of the Sierra foothill reservoirs continued in the flood control mode of operation.

## SUMMARY OF WATER CONDITIONS
## IN PERCENT OF AVERAGE

| HYDROLOGIC REGION | PRECIPITATION OCTOBER 1 TO DATE | MARCH 1 SNOW WATER CONTENT | MARCH 1 RESERVOIR STORAGE | RUNOFF OCTOBER 1 TO DATE | APR-JULY RUNOFF FORECAST | WATER YEAR RUNOFF FORECAST |
|---|---|---|---|---|---|---|
| NORTH COAST | 95 | 65 | 105 | 85 | 90 | 85 |
| SAN FRANCISCO BAY | 115 | -- | 105 | 85 | -- | -- |
| CENTRAL COAST | 125 | -- | 110 | 110 | -- | -- |
| SOUTH COAST | 160 | -- | 105 | 105 | -- | -- |
| SACRAMENTO RIVER | 115 | 120 | 105 | 90 | 100 | 95 |
| SAN JOAQUIN RIVER | 140 | 130 | 120 | 170 | 125 | 135 |
| TULARE LAKE | 160 | 145 | 120 | 190 | 135 | 145 |
| NORTH LAHONTAN | 135 | 135 | 80 | 140 | 120 | 125 |
| SOUTH LAHONTAN | 220 | 165 | 110 | 110 | 130 | 125 |
| COLORADO RIVER-DESERT | 135 | -- | -- | -- | -- | -- |
| **STATEWIDE** | 125 | 125 | 110 | 100 | 110 | 110 |

# DEPARTMENT OF WATER RESOURCES
# CALIFORNIA COOPERATIVE SNOW SURVEYS
## SEASONAL PRECIPITATION
IN PERCENT OF AVERAGE TO DATE
October 1, 2010 through February 28, 2011

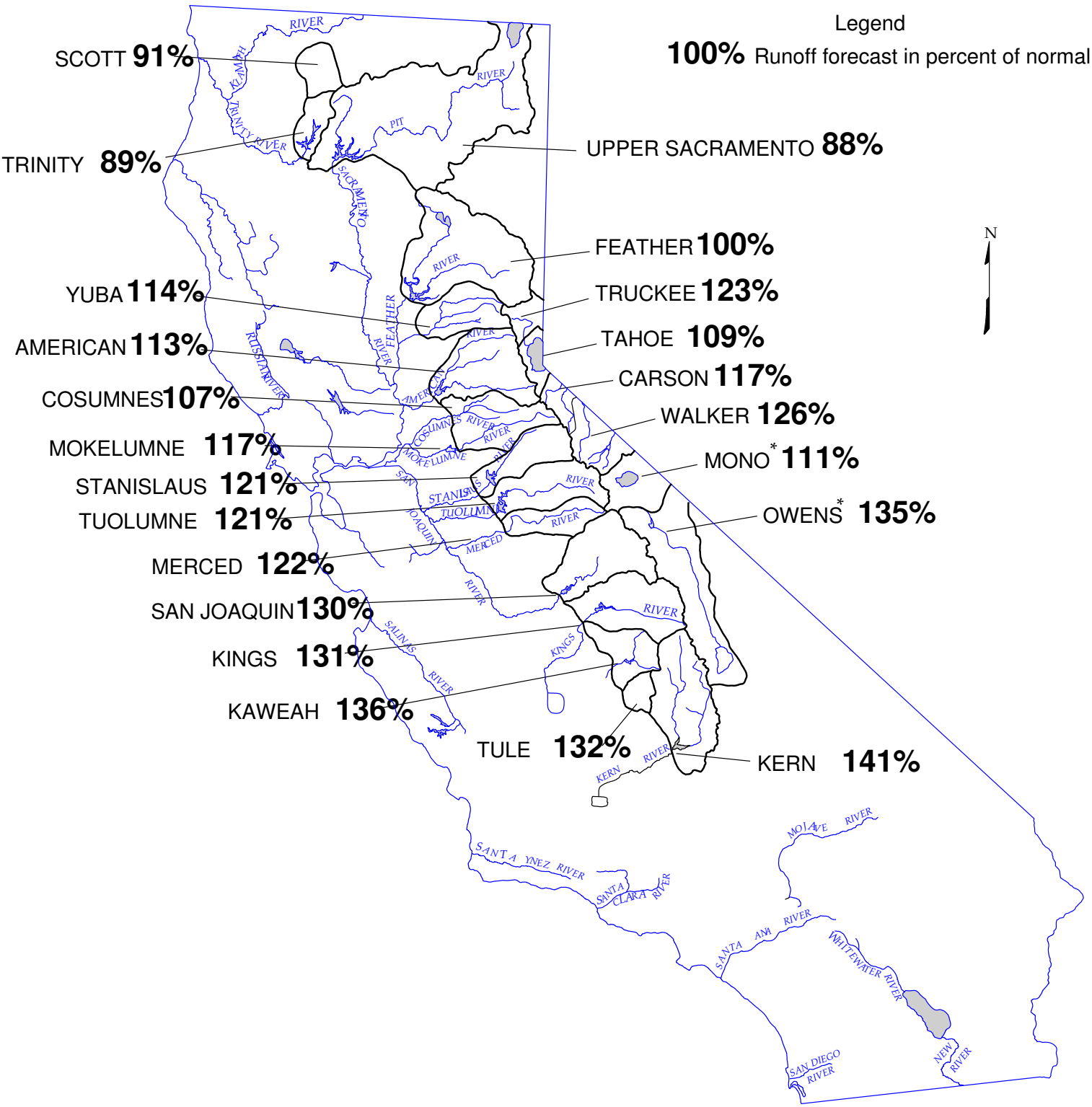



**Hydrologic Regions**

NC – North Coast
SF – San Francisco Bay
CC – Central Coast
SC – South Coast
SR – Sacramento River
SJ – San Joaquin
TL – Tulare Lake
NL – North Lahontan
SL – South Lahontan
CR – Colorado River–Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

# DEPARTMENT OF WATER RESOURCES
# CALIFORNIA COOPERATIVE SNOW SURVEYS
## FORECAST OF APRIL – JULY
## UNIMPAIRED SNOWMELT RUNOFF
## March 1, 2011




* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

## MARCH 1, 2011 FORECASTS
## APRIL-JULY UNIMPAIRED RUNOFF

| HYDROLOGIC REGION and Watershed | Unimpaired Runoff in 1,000 Acre-Feet (1) HISTORICAL 50 Yr Avg (2) | Max of Record | Min of Record | FORECAST Apr-Jul Forecasts | Pct of Avg | 80 % Probability Range (1) |
|---|---|---|---|---|---|---|
| **North Coast** | | | | | | |
| Trinity River at Lewiston Lake (10) | 654 | 1,593 | 80 | **580** | 89% | 450 - 870 |
| **SACRAMENTO RIVER** | | | | | | |
| **Upper Sacramento River** | | | | | | |
| Sacramento River at Delta above Shasta Lake | 298 | 711 | 39 | 260 | 87% | |
| McCloud River above Shasta Lake | 392 | 850 | 185 | 370 | 94% | |
| Pit River near Montgomery Creek + Squaw Creek | 1,066 | 2,098 | 480 | 890 | 83% | |
| Total Inflow to Shasta Lake | 1,819 | 3,525 | 726 | **1,600** | 88% | 1,160 - 2,500 |
| **Sacramento River above Bend Bridge, near Red Bluff** | 2,494 | 5,075 | 943 | **2,170** | 87% | 1,540 - 3,600 |
| **Feather River** | | | | | | |
| Feather River at Lake Almanor near Prattville (3) | 333 | 675 | 120 | 310 | 93% | |
| North Fork at Pulga (3) | 1,028 | 2,416 | 243 | 970 | 94% | |
| Middle Fork near Clio (4) | 86 | 518 | 4 | 80 | 93% | |
| South Fork at Ponderosa Dam (3) | 110 | 267 | 13 | 100 | 91% | |
| Feather River at Oroville | 1,782 | 4,676 | 392 | **1,780** | 100% | 1,180 - 2,930 |
| **Yuba River** | | | | | | |
| North Yuba below Goodyears Bar | 279 | 647 | 51 | 310 | 111% | |
| Inflow to Jackson Mdws and Bowman Reservoirs (3) | 112 | 236 | 25 | 125 | 112% | |
| South Yuba at Langs Crossing (3) | 233 | 481 | 57 | 250 | 107% | |
| Yuba River near Smartsville plus Deer Creek | 1,006 | 2,424 | 200 | **1,150** | 114% | 790 - 1,720 |
| **American River** | | | | | | |
| North Fork at North Fork Dam (3) | 262 | 716 | 43 | 290 | 111% | |
| Middle Fork near Auburn (3) | 522 | 1,406 | 100 | 580 | 111% | |
| Silver Creek Below Camino Diversion Dam (3) | 173 | 386 | 37 | 190 | 110% | |
| American River below Folsom Lake | 1,240 | 3,074 | 229 | **1,400** | 113% | 950 - 2,230 |
| **SAN JOAQUIN RIVER** | | | | | | |
| **Cosumnes River at Michigan Bar** | 126 | 363 | 8 | **135** | 107% | 75 - 285 |
| **Mokelumne River** | | | | | | |
| North Fork near West Point (5) | 437 | 829 | 104 | 480 | 110% | |
| Total Inflow to Pardee Reservoir | 461 | 1,065 | 102 | **540** | 117% | 420 - 780 |
| **Stanislaus River** | | | | | | |
| Middle Fork below Beardsley Dam (3) | 334 | 702 | 64 | 400 | 120% | |
| North Fork Inflow to McKays Point Dam (3) | 224 | 503 | 34 | 270 | 121% | |
| Stanislaus River below Goodwin Reservoir (9) | 702 | 1,710 | 116 | **850** | 121% | 680 - 1,240 |
| **Tuolumne River** | | | | | | |
| Cherry Creek & Eleanor Creek near Hetch Hetchy | 315 | 727 | 97 | 380 | 121% | |
| Tuolumme River near Hetch Hetchy | 604 | 1,392 | 153 | 730 | 121% | |
| Tuolumne River below La Grange Reservoir (9) | 1,220 | 2,682 | 301 | **1,470** | 121% | 1,210 - 2,090 |
| **Merced River** | | | | | | |
| Merced River at Pohono Bridge | 372 | 888 | 80 | 460 | 124% | |
| Merced River below Merced Falls (9) | 632 | 1,587 | 123 | **770** | 122% | 630 - 1,120 |
| **San Joaquin River** | | | | | | |
| San Joaquin River at Mammoth Pool (7) | 1,026 | 2,279 | 235 | 1,350 | 132% | |
| Big Creek below Huntington Lake (8) | 91 | 264 | 11 | 120 | 132% | |
| South Fork near Florence Lake (7) | 201 | 511 | 58 | 260 | 129% | |
| San Joaquin River inflow to Millerton Lake | 1,254 | 3,355 | 262 | **1,630** | 130% | 1,350 - 2,220 |
| **TULARE LAKE** | | | | | | |
| **Kings River** | | | | | | |
| North Fork Kings River near Cliff Camp (3) | 239 | 565 | 50 | 320 | 134% | |
| Kings River below Pine Flat Reservoir | 1,224 | 3,113 | 274 | **1,600** | 131% | 1,320 - 2,190 |
| **Kaweah River below Terminus Reservoir** | 286 | 814 | 62 | **390** | 136% | 330 - 570 |
| **Tule River below Lake Success** | 64 | 259 | 2 | **84** | 132% | 65 - 158 |
| **Kern River** | | | | | | |
| Kern River near Kernville | 384 | 1,203 | 83 | 540 | 141% | |
| Kern River inflow to Lake Isabella | 461 | 1,657 | 84 | **650** | 141% | 540 - 950 |

(1) See inside back cover for definition
(2) All 50 year averages are based on years 1956-2005 unless otherwise noted
(3) 50 year average based on years 1941-90
(4) 44 year average based on years 1936-79
(5) 36 year average based on years 1936-72
(6) 45 year average based on years 1936-81
(7) 50 year average based on years 1953-2002
(8) 50 year average based on years 1946-1995

**MARCH 1, 2011 FORECASTS**
**WATER YEAR UNIMPAIRED RUNOFF**

| Unimpaired Runoff in 1,000 Acre-Feet (1) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **HISTORICAL** | | | **DISTRIBUTION** | | | | | | | | | **FORECAST** | | | |
| 50 Yr Avg (2) | Max of Record | Min of Record | Oct Thru Jan | Feb * | Mar | Apr | May | Jun | Jul | Aug | Sep | Water Year Forecasts | Pct of Avg | 80 % Probability Range (1) | |
| 1398 | 2990 | 200 | 439 | 93 | 165 | 210 | 235 | 105 | 30 | 10 | 8 | **1,295** | 93% | 1125 - | 1685 |
| 887 | 1,965 | 165 | | | | | | | | | | | | | |
| 1,217 | 2,353 | 557 | | | | | | | | | | | | | |
| 3,159 | 5,150 | 1,484 | | | | | | | | | | | | | |
| 6,107 | 10,796 | 2,479 | 1,785 | 485 | 690 | 600 | 465 | 300 | 235 | 210 | 205 | **4,975** | 81% | 4,230 - | 6,500 |
| 8,907 | 17,180 | 3,294 | 2,730 | 710 | 1,065 | 830 | 645 | 400 | 295 | 260 | 260 | **7,195** | 81% | 6,100 - | 9,675 |
| 780 | 1,269 | 366 | | | | | | | | | | | | | |
| 2,417 | 4,400 | 666 | | | | | | | | | | | | | |
| 219 | 637 | 24 | | | | | | | | | | | | | |
| 291 | 562 | 32 | | | | | | | | | | | | | |
| 4,620 | 9,492 | 994 | 1,445 | 375 | 580 | 710 | 630 | 300 | 140 | 100 | 85 | **4,365** | 94% | 3,505 - | 6,015 |
| 564 | 1,056 | 102 | | | | | | | | | | | | | |
| 181 | 292 | 30 | | | | | | | | | | | | | |
| 379 | 565 | 98 | | | | | | | | | | | | | |
| 2,373 | 4,926 | 369 | 920 | 165 | 300 | 420 | 470 | 215 | 45 | 20 | 20 | **2,575** | 109% | 2,105 - | 3,315 |
| 616 | 1,234 | 66 | | | | | | | | | | | | | |
| 1,070 | 2,575 | 144 | | | | | | | | | | | | | |
| 318 | 705 | 59 | | | | | | | | | | | | | |
| 2,719 | 6,382 | 349 | 1,120 | 225 | 375 | 490 | 580 | 275 | 55 | 20 | 10 | **3,150** | 116% | 2,570 - | 4,220 |
| 390 | 1,253 | 20 | 199 | 56 | 74 | 70 | 45 | 17 | 3 | 1 | 0 | **465** | 119% | 370 - | 700 |
| 626 | 1,009 | 197 | | | | | | | | | | | | | |
| 755 | 1,800 | 129 | 255 | 50 | 90 | 145 | 225 | 150 | 20 | 3 | 2 | **940** | 125% | 790 - | 1,230 |
| 471 | 929 | 88 | | | | | | | | | | | | | |
| 1,171 | 2,952 | 155 | 415 | 100 | 155 | 230 | 350 | 215 | 55 | 15 | 5 | **1,540** | 132% | 1,330 - | 2,020 |
| 461 | 1,147 | 123 | | | | | | | | | | | | | |
| 770 | 1,661 | 258 | | | | | | | | | | | | | |
| 1,951 | 4,631 | 383 | 700 | 135 | 230 | 320 | 535 | 470 | 145 | 30 | 15 | **2,580** | 132% | 2,270 - | 3,320 |
| 461 | 1,020 | 92 | | | | | | | | | | | | | |
| 1,007 | 2,787 | 150 | 355 | 110 | 130 | 170 | 310 | 230 | 60 | 15 | 5 | **1,385** | 138% | 1,210 - | 1,810 |
| 1,337 | 2,964 | 308 | | | | | | | | | | | | | |
| 112 | 298 | 14 | | | | | | | | | | | | | |
| 248 | 653 | 71 | | | | | | | | | | | | | |
| 1,836 | 4,642 | 362 | 490 | 115 | 190 | 290 | 570 | 540 | 230 | 70 | 30 | **2,525** | 138% | 2,190 - | 3,220 |
| 284 | 607 | 58 | | | | | | | | | | | | | |
| 1,721 | 4,287 | 386 | 470 | 100 | 155 | 270 | 570 | 540 | 220 | 65 | 30 | **2,420** | 141% | 2,090 - | 3,110 |
| 454 | 1,402 | 94 | 154 | 36 | 65 | 85 | 145 | 120 | 40 | 10 | 5 | **660** | 145% | 580 - | 880 |
| 148 | 615 | 16 | 92 | 14 | 33 | 32 | 33 | 14 | 5 | 2 | 1 | **226** | 153% | 195 - | 335 |
| 558 | 1,577 | 163 | | | | | | | | | | | | | |
| 730 | 2,318 | 175 | 210 | 55 | 85 | 140 | 245 | 175 | 90 | 35 | 20 | **1,055** | 144% | 920 - | 1,430 |

(9) Forecast point names based on USGS gage names. Stanislaus below Goodwin also known as inflow to New Melones, Tuolumne River below La Grange also known as inflow to Don Pedro, Merced River below Merced Falls also known as inflow to McClure.
(10) Coordinated Forecast by National Weather Service California-Nevada River Forecast Center and Department of Water Resources, State of California

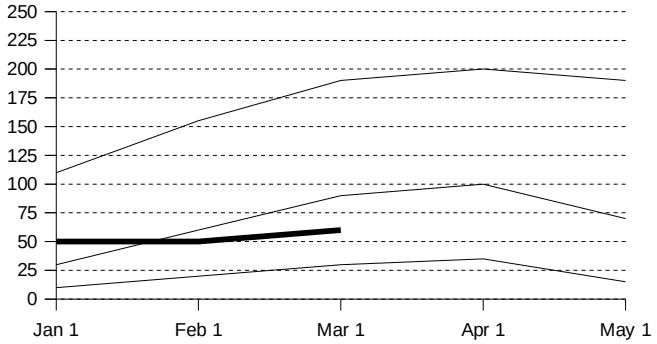
## MARCH 1, 2011 FORECASTS
## APRIL-JULY UNIMPAIRED RUNOFF

| HYDROLOGIC REGION and Watershed | Apr-Jul Unimpaired Runoff in 1,000 Acre-Feet (1) HISTORICAL 50 Yr Avg (2) | Max of Record | Min of Record | FORECAST Apr-Jul Forecasts | Pct of Avg |
|---|---|---|---|---|---|
| **NORTH COAST** | | | | | |
| **Scott River** | | | | | |
| Scott River nr Ft Jones (3) | 181 | 398 | 22 | **165** | 91% |
| **Klamath River** | | | | | |
| Total inflow to Upper Klamath Lake (4) | 515 | 1,151 | 149 | **500** | 97% |
| **NORTH LAHONTAN** | | | | | |
| **Truckee River** | | | | | |
| Lake Tahoe to Farad accretions | 261 | 713 | 52 | **320** | 123% |
| Lake Tahoe Rise (assuming gates closed, ft) | 1.4 | 5.4 | 0.2 | **1.5** | 109% |
| **Carson River** | | | | | |
| West Fork Carson River at Woodfords | 54 | 135 | 12 | **63** | 116% |
| East Fork Carson River near Gardnerville | 187 | 407 | 43 | **220** | 118% |
| **Walker River** | | | | | |
| West Walker River below Little Walker, near Coleville | 154 | 330 | 35 | **190** | 123% |
| East Walker River near Bridgeport | 64 | 209 | 7 | **85** | 133% |
| **SOUTH LAHONTAN** | | | | | |
| **Owens River** | | | | | |
| Total tributary flow to Owens River (5) | 235 | 579 | 96 | **317** | 135% |

(1) See inside back cover for definition
(2) All 50 year averages are based on years 1956-2005 unless otherwise noted
(3) Forecast by National Weather Service California-Nevada River Forecast Center. 30 yr average (1971-2000)
(4) Forecast by U.S. Natural Resources Conservation Service and National Weather Service California-Nevada River Forecast Center, April through September forecast, 30 year average based on years 1971-2000.
(5) Forecast by Department of Water and Power, City of Los Angeles, average based on years 1951-2000.

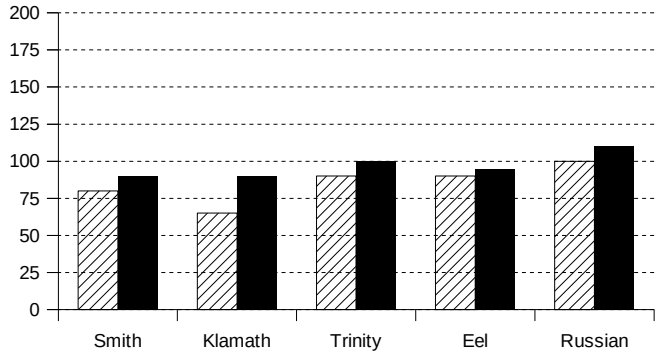
## Snowpack Accumulation

Water Content in % of April 1 Average



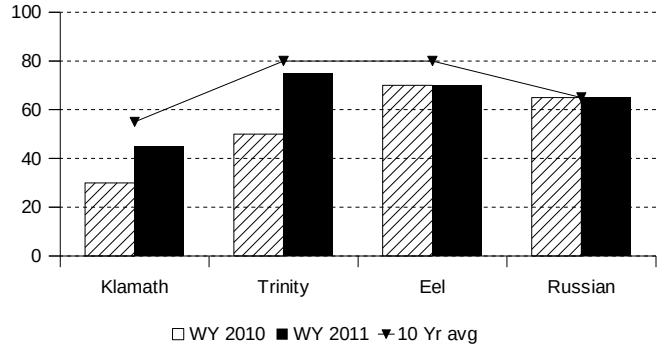

## Precipitation

October 1 to date in % of Average



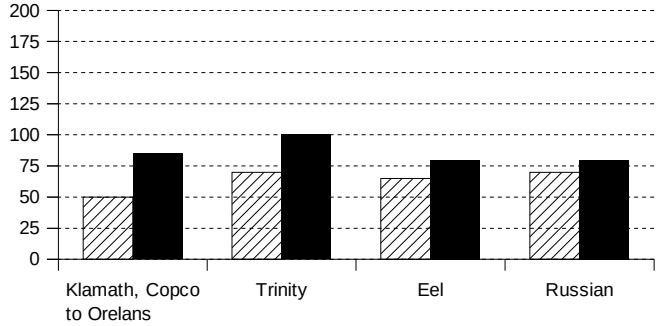

## Reservoir Storage

Contents of major reservoirs in % of capacity




## Runoff

October 1 to date in % of average




# NORTH COAST REGION

***SNOWPACK***- First off the month measurements made at 1 snow courses indicate an area wide snow water equivalent of 20.2 inches. This is 65 percent of the March 1 average and 60 percent of the seasonal (April 1) average. Last year at this time the pack was holding 23.9 inches of water.

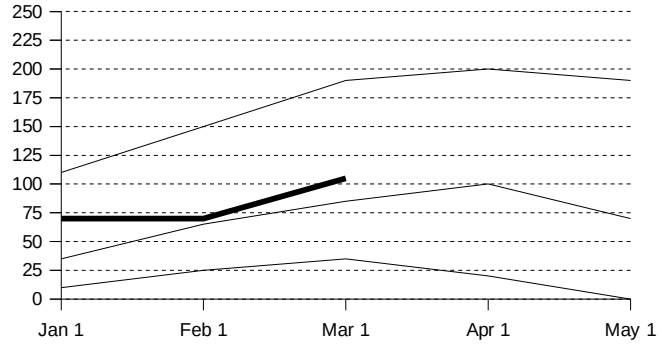
***PRECIPITATION*** - Seasonal precipitation (October 1 through the end of last month) on this area was 95 percent of normal. Precipitation last month was about 75 percent of the monthly average. Seasonal precipitation at this time last year stood at 85 percent of normal.

***RESERVOIR STORAGE***- First of the month storage in 6 reservoirs was 2.3 million acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 70 percent of average.

***RUNOFF*** -Seasonal runoff of streams draining the area totaled 6.4 million acre-feet which is 85 percent of the average for this period. Last year, runoff for the same period was 60 percent of average.

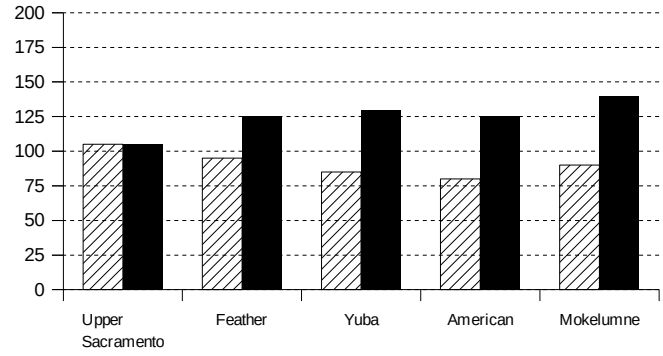
## Snowpack Accumulation

Water Content in % of April 1 Average



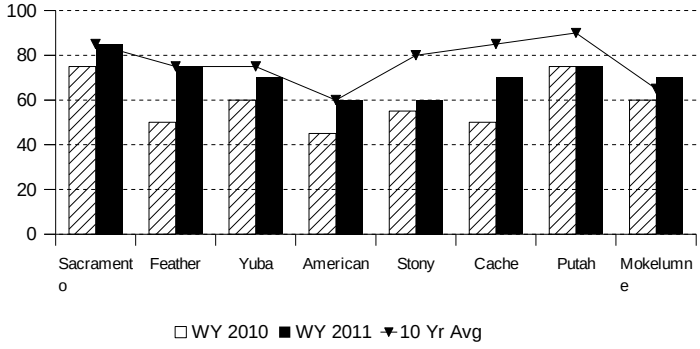

## Precipitation

October 1 to date in % of Average




## Reservoir Storage

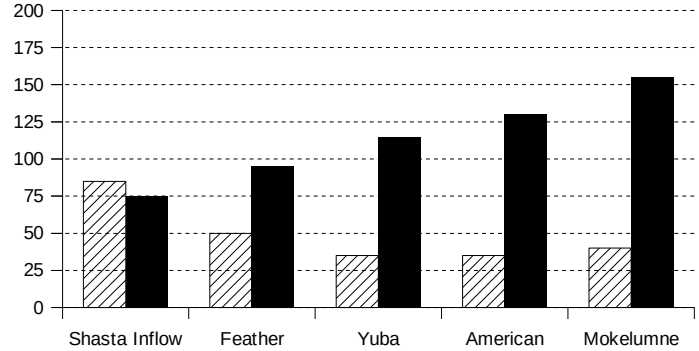
Contents of major reservoirs in % of capacity




□ WY 2010 ■ WY 2011 ▼ 10 Yr Avg

## Runoff

October 1 to date in % of average




# SACRAMENTO RIVER REGION

***SNOWPACK***- First of the month measurements made at 59 snow courses indicate an area wide snow water equivalent of 33.1 inches. This is 120 percent of the March 1 average and 105 percent of the seasonal (April 1) average. Last year at this time the pack was holding 28.3 inches of water.

***PRECIPITATION*** - Seasonal precipitation (October 1 through the end of last month) on this area was 115 percent of normal. Precipitation last month was about 95 percent of the monthly average. Seasonal precipitation at this time last year stood at 95 percent of normal.

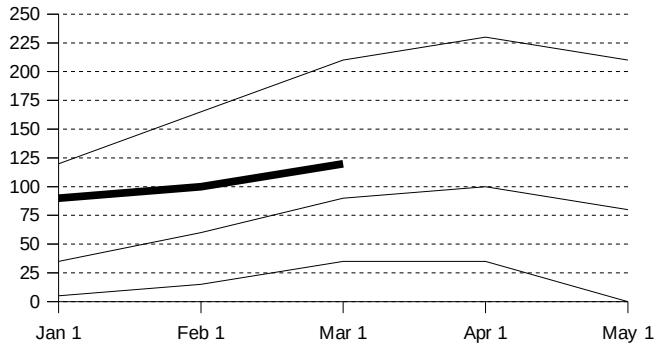
***RESERVOIR STORAGE***- First of the month storage in 43 reservoirs was 11.9 million acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 85 percent of average.

***RUNOFF*** - Seasonal runoff of streams draining the area totaled 7.7 million acre-feet which is 90 percent of average for this period. Last year, runoff for the same period was 65 percent of average.

The **Sacramento Region 40-30-30 Water Supply Index** is forecast to be 7.7 assuming median meteorological conditions for the remainder of the year. This classifies the year as "below normal" in the Sacramento Valley according to the State Water Resources Control Board.

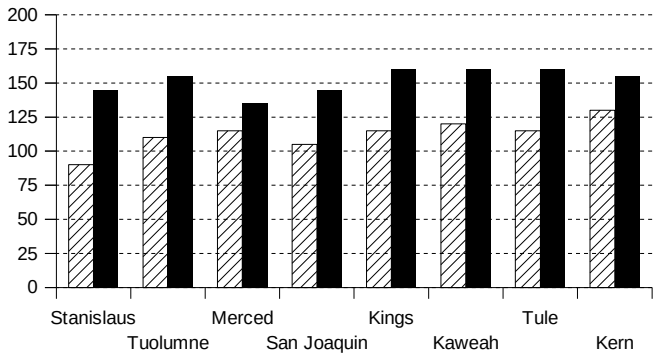
## Snowpack Accumulation

Water Content in % of April 1 Average



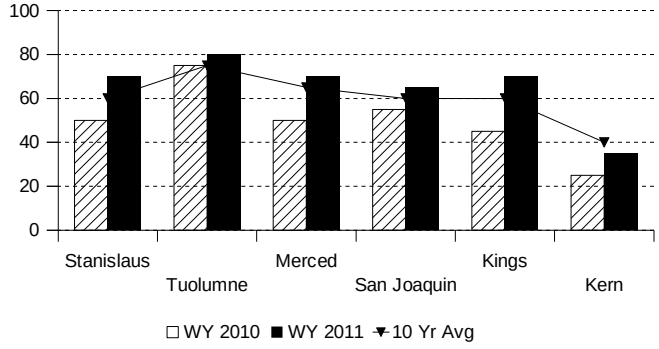

## Precipitation

October 1 to date in % of Average



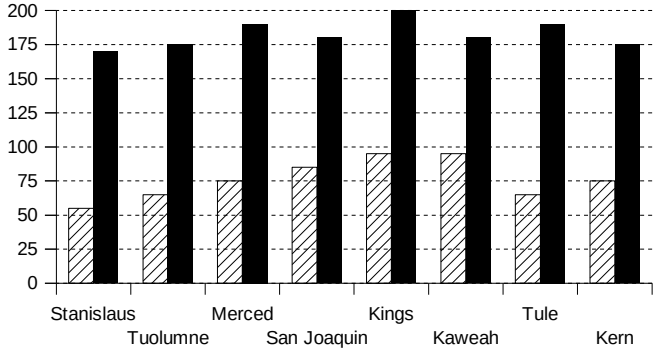

## Reservoir Storage

Contents of major reservoirs in % of capacity




## Runoff

October 1 to date in % of average




# SAN JOAQUIN RIVER AND TULARE LAKE REGIONS

***SNOWPACK-*** First of the month measurements made at 62 **San Joaquin Region** snow courses indicate an area wide snow water equivalent of 35.6 inches. This is 135 percent of the March 1 average and 115 percent of seasonal (April 1) average. Last year at this time the pack was holding 28.1 inches of water. At the same time 31 **Tulare Lake Region** snow courses indicated a basin-wide snow water equivalent of 29.5 inches which is 135 percent of the average for March 1 and 120 percent of the seasonal average. Last year at this time the basin was holding 24.5 inches of water.

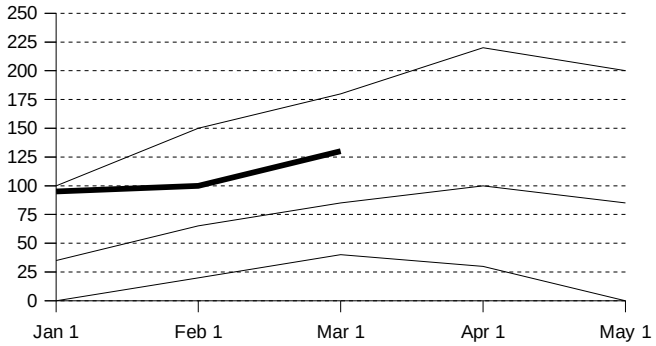
***PRECIPITATION*** - Seasonal precipitation (October 1 through the end of last month) on the **San Joaquin Region** was 140 percent of normal. Precipitation last month was about 100 percent of the monthly average. Seasonal precipitation at this time last year stood at 105 percent of normal. Seasonal precipitation on the **Tulare Lake Region** was 160 percent of normal. Precipitation last month was about 70 percent of the monthly average. Seasonal precipitation at this time last year stood at 120 percent of normal.

***RESERVOIR STORAGE***- First of the month storage in 34 **San Joaquin Region** reservoirs was 8.6 million acre-feet which is 120 percent of average. About 75 percent of available capacity was being used. Storage at this time last year was 95 percent of average. First of the month storage in 4 **Tulare Lake Region** reservoirs was 925 thousand acre-feet which is 120 percent of average and about 50 percent of available capacity. Storage in at this time last year was 90 percent of average.

***RUNOFF***- Seasonal runoff of streams draining the **San Joaquin Region** totaled 2.9 million acre-feet which is 170 percent of average for this period. Last year, runoff for the same period was 60 percent of average. Seasonal runoff of streams draining the **Tulare Lake Basin** totaled 1.2 million acre-feet which is 190 percent of average for this period. Last year runoff for this same period was 85 percent of average. The **San Joaquin Region 60-20-20 Water Supply Index** is forecast to be 3.9 assuming 75 percent meteorological conditions. This classifies the year as "wet" in the San Joaquin Region according to the State Water Resources Control Board.

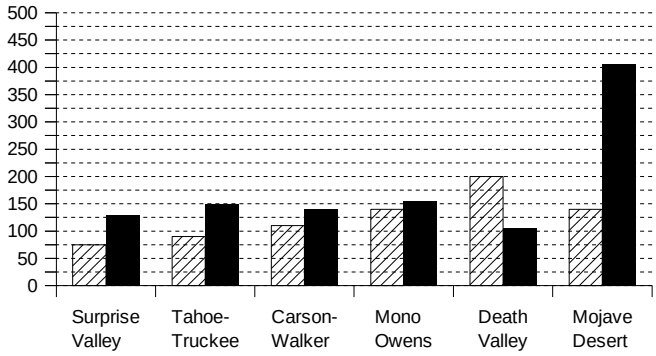
## Snowpack Accumulation

Water Content in % of April 1 Average



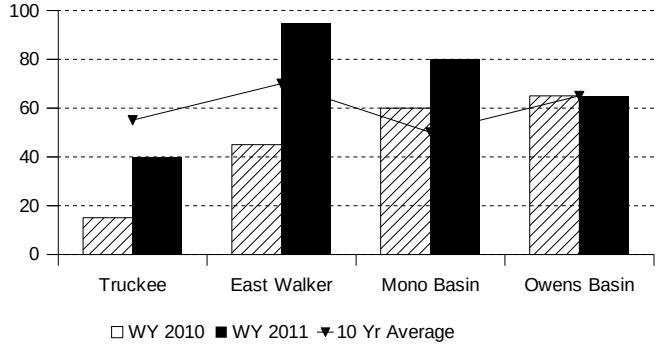

## Precipitation

October 1 to date in % of Average



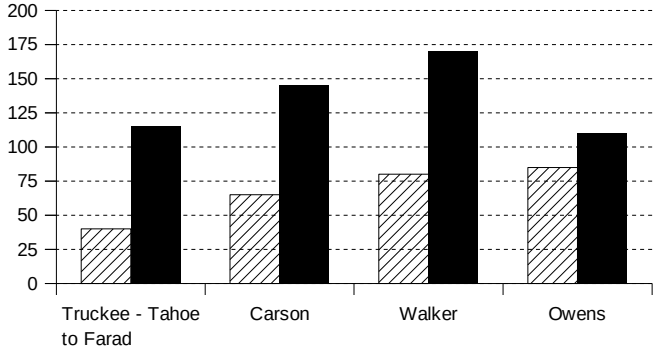

## Reservoir Storage

Contents of major reservoirs in % of capacity




## Runoff

October 1 to date in % of average




# NORTH AND SOUTH LAHONTAN REGIONS

***SNOWPACK-*** First of the month measurements made at 11 **North Lahontan snow** courses indicate an area wide snow water equivalent of 32.5 inches. This is 135 percent of the March 1 average and 120 percent of seasonal (April 1) average. Last year at this time the pack was holding 20.9 inches of water. At the same time 14 **South Lahontan Region** snow courses indicated a basin-wide snow water equivalent of 27.5 inches which is 165 percent of the average for March 1 and 140 percent of the seasonal average. Last year at this time the basin was holding 18.2 inches of water.

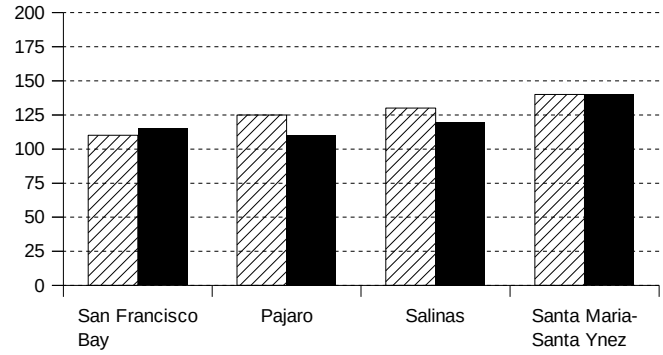
***PRECIPITATION*** - Seasonal precipitation (October 1 through the end of last month) on the **North Lahontan** was 135 percent of normal. Precipitation last month was about 220 percent of the monthly average. Seasonal precipitation at this time last year stood at 65 percent of normal. Seasonal precipitation on the **South Lahontan** was 190 percent of normal. Precipitation last month was about 165 percent of the monthly average. Seasonal precipitation at this time last year stood at 160 percent of normal.

***RESERVOIR STORAGE***- First of the month storage in 5 **North Lahontan** reservoirs was 450 thousand acre-feet which is 80 percent of average. About 40 percent of available capacity was being used. Storage in these reservoirs at this time last year was 30 percent of average. Lake Tahoe was 1.95 feet above its natural rim on March 1. First of the month storage in 8 **South Lahontan** reservoirs was 290 thousand acre-feet which is 110 percent of average and about 70 percent of available capacity. Storage in these reservoirs at this time last year was 70 percent of average.

***RUNOFF***- Seasonal runoff of streams draining the **North Lahontan Region** totaled 283 thousand acre-feet which is 140 percent of average for this period. Last year, runoff for the same period was 60 percent of average. Seasonal runoff of the Owens River in the **South Lahontan Region** totaled 60 thousand acre-feet which is 110 percent of average for this period. Last year runoff for this same period was at 85 percent of average.

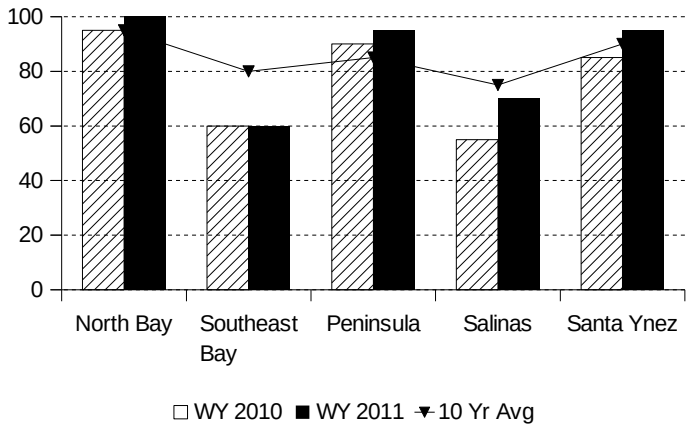
## Precipitation

October 1 to date in % of Average



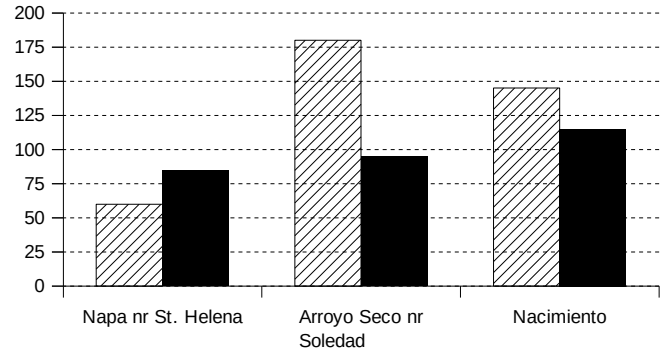

## Reservoir Storage

Contents of major reservoirs in % of capacity




## Runoff

October 1 to date in % of average




# SAN FRANCISCO BAY AND CENTRAL COAST REGIONS

***PRECIPITATION*** - Seasonal precipitation (October 1 through the end of last month) on the **San Francisco Bay Region** was 115 percent of normal. Precipitation last month was about 120 percent of the monthly average. Seasonal precipitation at this time last year stood at 110 percent of normal.
Seasonal precipitation on the **Central Coast Region** was 125 percent of normal. Precipitation last month was about 105 percent of the monthly average. Seasonal precipitation at this time last year stood at 130 percent of normal.

***RESERVOIR STORAGE***- First of the month storage in 13 **San Francisco Bay Region** reservoirs was 532 thousand acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 100 percent of average.
First of the month storage in 6 **Central Coast Region** reservoirs was 723 thousand acre-feet which is 110 percent of average and about 75 percent of available capacity. Storage in these reservoirs at this time last year was 90 percent of average.

***RUNOFF***- Seasonal runoff of the Napa River in the **San Francisco Bay Region** totaled 46 thousand acre-feet which is 85 percent of average for this period. Last year, runoff for the same period was 60 percent of average. Seasonal runoff of streams draining the **Central Coast Region** totaled 234 thousand acre-feet which is 110 percent of average for this period. Last year runoff for this same period was 155 percent of average.

# SOUTH COAST AND COLORADO RIVER REGIONS

***PRECIPITATION*** - October through February (seasonal) precipitation on the **South Coast Region** was 160 percent of normal. February precipitation was 85 percent of the monthly average. Seasonal precipitation at this time last year was 125 percent of normal. Seasonal precipitation on the **Colorado River-Desert Region** was 135 percent of normal and last year's seasonal precipitation on the **Colorado River-Desert Region** was 185 percent of normal. Precipitation in February was 190 percent of average.

***RESERVOIR STORAGE*** - March 1 storage in 29 major **South Coast Region** reservoirs was 1.5 million acre-feet or 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was about 90 percent of average. On March 1 combined storage in Lakes Powell, Mead, Mohave and Havasu was about 26.6 million acre-feet or about 65 percent of average. About 50 percent of available capacity was in use. Last year at this time, these reservoirs were storing about 27.5 million acre-feet.

***RUNOFF*** - Seasonal runoff from selected **South Coast Region** streams totaled 29 thousand acre-feet which is 105 percent of average. Seasonal runoff from these streams last year was 85 percent of average.

***COLORADO RIVER -*** The April -July inflow to Lake Powell is forecast to be 9.2 million acre-feet, which is 116 percent of average. The March 1 snowpack was 120 percent, highest in the Duchesne basin at 145 percent of average and lowest on the San Juan at 95 percent.

**MAJOR WATER DISTRIBUTION PROJECTS**

**RESERVOIR STORAGE**

(AVERAGES BASED ON 1951-2000 OR PERIOD RECORD)

| RESERVOIR | CAPACITY 1,000 AF | AVERAGE STORAGE 1,000 AF | STORAGE AT END OF February 2010 1,000 AF | 2011 1,000 AF | PERCENT AVERAGE | PERCENT CAPACITY |
|---|---|---|---|---|---|---|
| *STATE WATER PROJECT* | | | | | | |
| Lake Oroville | 3,538 | 2,523 | 1,386 | 2,684 | 106% | 76% |
| San Luis Reservoir (SWP) | 1,062 | 943 | 694 | 1,035 | 110% | 97% |
| Lake Del Valle | 77 | 34 | 41 | 37 | 108% | 48% |
| Lake Silverwood | 73 | 66 | 71 | 70 | 107% | 96% |
| Pyramid Lake | 171 | 163 | 168 | 168 | 103% | 98% |
| Castaic Lake | 325 | 271 | 280 | 293 | 108% | 90% |
| Perris Lake | 132 | 117 | 65 | 74 | 63% | 56% |
| *CENTRAL VALLEY PROJECT* | | | | | | |
| Trinity Lake | 2,448 | 1,851 | 1,173 | 1,891 | 102% | 77% |
| Lake Shasta | 4,552 | 3,370 | 3,380 | 3,784 | 112% | 83% |
| Whiskeytown Lake | 241 | 207 | 211 | 205 | 99% | 85% |
| Folsom Lake | 977 | 554 | 419 | 613 | 111% | 63% |
| New Melones Reservoir | 2,420 | 1,440 | 1,234 | 1,694 | 118% | 70% |
| Millerton Lake | 520 | 345 | 305 | 407 | 118% | 78% |
| San Luis Reservoir (CVP) | 971 | 816 | 745 | 971 | 119% | 100% |
| *COLORADO RIVER PROJECT* | | | | | | |
| Lake Mead | 26,159 | 20,494 | 11,780 | 11,117 | 54% | 42% |
| Lake Powell | 24,322 | 18,176 | 13,780 | 13,235 | 73% | 54% |
| Lake Mohave | 1,810 | 1,683 | 1,680 | 1,699 | 101% | 94% |
| Lake Havasu | 619 | 550 | 548 | 567 | 103% | 91% |
| *EAST BAY MUNICIPAL UTILITY DISTRICT* | | | | | | |
| Pardee Res | 198 | 181 | 169 | 192 | 106% | 97% |
| Camanche Reservoir | 417 | 252 | 304 | 289 | 115% | 69% |
| East Bay (4 res.) | 147 | 132 | 124 | 134 | 101% | 91% |
| *CITY AND COUNTY OF SAN FRANCISCO* | | | | | | |
| Hetch-Hetchy Reservoir | 360 | 148 | 272 | 237 | 160% | 66% |
| Cherry Lake | 268 | 125 | 258 | 226 | 180% | 84% |
| Lake Eleanor | 26 | 10 | 16 | 19 | 188% | 74% |
| South Bay/Peninsula (4 res.) | 225 | 172 | 158 | 169 | 98% | 75% |
| *CITY OF LOS ANGELES (D.W.P.)* | | | | | | |
| Lake Crowley | 183 | 126 | 133 | 122 | 97% | 67% |
| Grant Lake | 48 | 27 | 35 | 44 | 161% | 92% |
| Other Aqueduct Storage (6 res.) | 83 | 75 | 54 | 56 | 74% | 67% |

# TELEMETERED SNOW WATER EQUIVALENTS

March 1, 2011

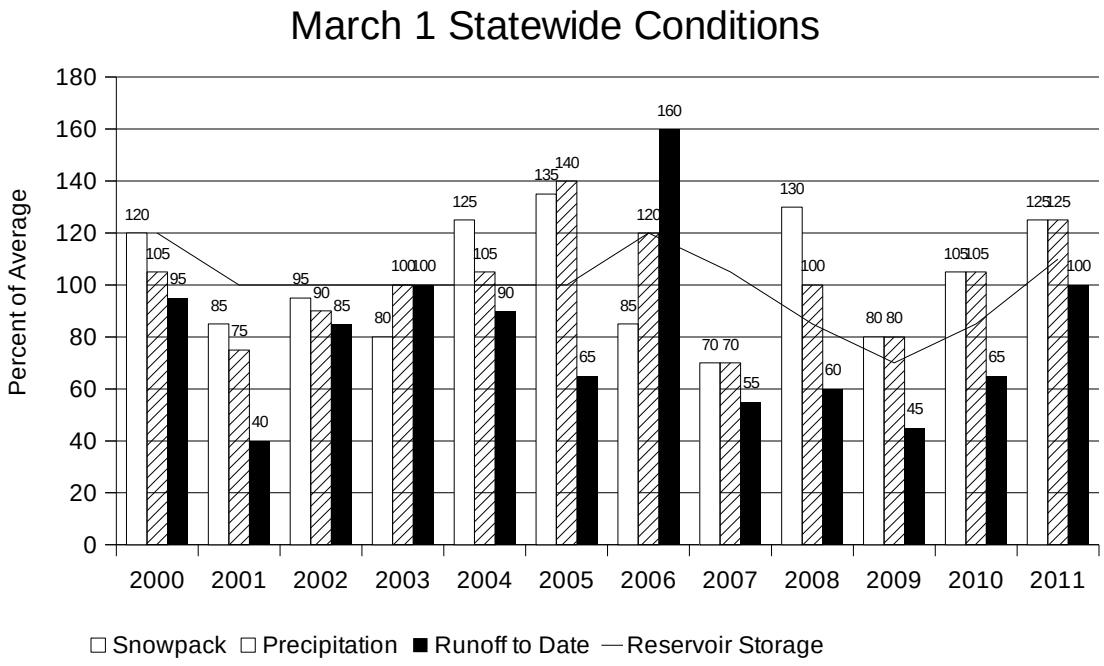
(AVERAGES BASED ON PERIOD RECORD)

| BASIN NAME / STATION NAME | ELEV | APRIL 1 AVERAGE | INCHES OF WATER EQUIVALENT Mar 1 | PERCENT OF AVERAGE | 24 HRS PREVIOUS | 1 WEEK PREVIOUS |
|---|---|---|---|---|---|---|
| **TRINITY RIVER** | | | | | | |
| Peterson Flat | 7150’ | 29.2 | — | — | — | — |
| Red Rock Mountain | 6700’ | 39.6 | 39.9 | 100.8 | 40.0 | 38.7 |
| Bonanza King | 6450’ | 40.5 | 38.5 | 95.1 | 37.7 | 35.0 |
| Shimmy Lake | 6400’ | 40.3 | 38.5 | 95.7 | 38.6 | 35.8 |
| Middle Boulder 3 | 6200’ | 28.3 | 26.2 | 92.4 | 25.9 | 23.8 |
| Highland Lakes | 6030’ | 29.9 | 28.1 | 93.9 | 27.8 | 25.4 |
| Scott Mountain | 5900’ | 16.0 | 18.2 | 114.0 | 17.9 | 15.8 |
| Mumbo Basin | 5650’ | 22.4 | 26.0 | 116.3 | 26.2 | 24.2 |
| Big Flat | 5100’ | 15.8 | 20.6 | 130.5 | 20.4 | 19.4 |
| Crowder Flat | 5100’ | — | 5.5 | — | 5.5 | 5.0 |
| **SACRAMENTO RIVER** | | | | | | |
| Cedar Pass | 7100’ | 18.1 | 19.5 | 107.7 | 19.1 | 15.7 |
| Blacks Mountain | 7050’ | 12.7 | 11.2 | 87.8 | 10.9 | 9.3 |
| Sand Flat | 6750’ | 42.4 | 37.7 | 88.9 | 37.6 | 35.5 |
| Medicine Lake | 6700’ | 32.6 | 27.4 | 83.9 | 27.1 | 25.2 |
| Adin Mountain | 6200’ | 13.6 | — | — | — | — |
| Snow Mountain | 5950’ | 27.0 | 35.0 | 129.8 | 34.9 | 31.7 |
| Slate Creek | 5700’ | 29.0 | 30.6 | 105.6 | 30.7 | 28.2 |
| Stouts Meadow | 5400’ | 36.0 | 43.3 | 120.2 | 44.7 | 41.2 |
| **FEATHER RIVER** | | | | | | |
| Lower Lassen Peak | 8250’ | — | 62.0 | — | 66.2 | 60.3 |
| Kettle Rock | 7300’ | 25.5 | 26.4 | 103.5 | 26.2 | 23.8 |
| Grizzly Ridge | 6900’ | 29.7 | 33.4 | 112.3 | 33.2 | 30.7 |
| Pilot Peak | 6800’ | 52.6 | 53.0 | 100.7 | 53.2 | 49.9 |
| Gold Lake | 6750’ | 36.5 | 43.8 | 120.0 | 43.7 | 40.3 |
| Humbug | 6500’ | 28.0 | 38.3 | 136.7 | 38.2 | 35.3 |
| Harkness Flat | 6200’ | 28.5 | — | — | — | — |
| Rattlesnake | 6100’ | 14.0 | 29.9 | 213.4 | 29.9 | 27.6 |
| Bucks Lake | 5750’ | 44.7 | 55.8 | 124.8 | 55.4 | 53.0 |
| Four Trees | 5150’ | 20.0 | 35.9 | 179.3 | 35.8 | 33.7 |
| **EEL RIVER** | | | | | | |
| Noel Spring | 5100’ | — | 6.1 | — | 6.5 | 6.8 |
| **YUBA & AMERICAN RIVERS** | | | | | | |
| Lake Lois | 8600’ | 39.5 | 57.2 | 144.8 | 57.1 | 50.2 |
| Schneiders | 8750’ | 34.5 | 52.0 | 150.7 | 51.9 | 47.2 |
| Carson Pass | 8353’ | — | 38.8 | — | 38.8 | 35.7 |
| Caples Lake | 8000’ | 30.9 | 34.0 | 109.9 | 33.8 | 32.2 |
| Alpha | 7600’ | 35.9 | 41.9 | 116.8 | 41.9 | 37.5 |
| Meadow Lake | 7200’ | 55.5 | 67.8 | 122.1 | 67.7 | 63.5 |
| Silver Lake | 7100’ | 22.7 | 36.9 | 162.5 | 36.8 | 33.3 |
| Central Sierra Snow Lab | 6900’ | 33.6 | 50.3 | 149.7 | 50.3 | 46.7 |
| Huysink | 6600’ | 42.6 | 37.2 | 87.3 | 37.1 | 34.2 |
| Van Vleck | 6700’ | 35.9 | 49.5 | 137.9 | 49.1 | 43.7 |
| Robinson Cow Camp | 6480’ | — | 53.2 | — | 53.0 | 47.0 |
| Robbs Saddle | 5900’ | 21.4 | 28.3 | 132.3 | 28.3 | 24.7 |
| Greek Store | 5600’ | 21.0 | — | — | — | — |
| Blue Canyon | 5280’ | 9.0 | 24.8 | 275.4 | — | — |
| Robbs Powerhouse | 5150’ | 5.2 | 18.7 | 360.4 | 18.9 | 17.4 |
| **MOKELUMNE & STANISLAUS RIVERS** | | | | | | |
| Deadman Creek | 9250’ | 37.2 | 33.2 | 89.4 | 33.1 | 29.3 |
| Highland Meadow | 8700’ | 47.9 | — | — | — | — |
| Gianelli Meadow | 8400’ | 55.5 | 53.4 | 96.2 | 53.3 | 48.6 |
| Lower Relief Valley | 8100’ | 41.2 | 41.3 | 100.2 | 41.6 | 38.2 |
| Blue Lakes | 8000’ | 33.1 | 33.2 | 100.3 | 33.1 | 30.5 |
| Mud Lake | 7900’ | 44.9 | — | — | — | — |
| Stanislaus Meadow | 7750’ | 47.5 | 53.7 | 113.1 | 53.5 | 48.9 |
| Bloods Creek | 7200’ | 35.5 | 40.8 | 114.9 | 40.7 | 36.6 |
| Black Springs | 6500’ | 32.0 | 34.3 | 107.2 | 34.0 | 30.2 |
| **TUOLUMNE & MERCED RIVERS** | | | | | | |
| Tioga Pass Entrance | 9945’ | — | — | — | — | — |
| Dana Meadows | 9800’ | 27.7 | 29.3 | 105.8 | 29.4 | 27.4 |
| Slide Canyon | 9200’ | 41.1 | 44.9 | 109.3 | 44.9 | 41.6 |
| Lake Tenaya | 8150’ | 33.1 | — | — | — | — |
| Tuolumne Meadows | 8600’ | 22.6 | — | — | — | — |
| Horse Meadow | 8400’ | 48.6 | 57.5 | 118.3 | 57.4 | 53.2 |
| Ostrander Lake | 8200’ | 34.8 | 40.4 | 116.1 | 40.5 | 38.2 |
| White Wolf | 7900’ | — | 37.5 | — | 37.6 | 34.9 |
| Paradise Meadow | 7650’ | 41.3 | — | — | — | — |
| Gin Flat | 7050’ | 34.2 | 34.3 | 100.4 | 34.1 | 31.3 |
| Lower Kibbie Ridge | 6700’ | 27.4 | 27.3 | 99.7 | 27.6 | 24.9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **SAN JOAQUIN RIVER** | | | | | | |
| Volcanic Knob | 10050’ | 30.1 | — | — | — | — |
| Agnew Pass | 9450’ | 32.3 | 31.7 | 98.1 | 31.7 | 30.1 |
| Kaiser Point | 9200’ | 37.8 | 40.3 | 106.5 | 39.9 | 36.9 |
| Green Mountain | 7900’ | 30.8 | 38.3 | 124.3 | 38.2 | 35.4 |
| Tamarack Summit | 7550’ | 30.5 | 38.2 | 125.3 | 37.9 | 35.7 |
| Chilkoot Meadow | 7150’ | 38.0 | 32.9 | 86.6 | 33.0 | 33.4 |
| Huntington Lake | 7000’ | 20.1 | 33.4 | 166.0 | 33.2 | 31.7 |
| Graveyard Meadow | 6900’ | 18.8 | 31.3 | 166.6 | 31.3 | 29.9 |
| Poison Ridge | 6900’ | 28.9 | 37.3 | 129.1 | 37.3 | 35.5 |
| **KINGS RIVER** | | | | | | |
| Bishop Pass | 11200’ | 34.0 | 32.4 | 95.3 | 32.2 | 30.1 |
| State Lakes | 10300’ | 29.0 | 42.2 | 145.5 | 41.9 | 39.2 |
| Mitchell Meadow | 9900’ | 32.9 | 46.4 | 141.0 | 46.4 | 45.0 |
| Blackcap Basin | 10300’ | 34.3 | 39.3 | 114.6 | 39.4 | 37.0 |
| Upper Burnt Corral | 9700’ | 34.6 | 38.1 | 110.0 | 38.3 | 36.4 |
| West Woodchuck Meadow | 9100’ | 32.8 | 45.9 | 139.9 | 46.7 | 44.7 |
| Big Meadows | 7600’ | 25.9 | 33.5 | 129.3 | 33.1 | 32.4 |
| **KAWEAH & TULE RIVERS** | | | | | | |
| Quaking Aspen | 7200’ | 21.0 | 32.4 | 154.2 | 31.8 | 29.8 |
| Giant Forest | 6650’ | 10.0 | 18.6 | 186.0 | 18.5 | 18.0 |
| **KERN RIVER** | | | | | | |
| Upper Tyndall Creek | 11400’ | 27.7 | 27.3 | 98.6 | 27.2 | 25.4 |
| Crabtree Meadow | 10700’ | 19.8 | 21.4 | 107.8 | 21.2 | 20.3 |
| Chagoopa Plateau | 10300’ | 21.8 | — | — | — | — |
| Pascoes | 9150’ | 24.9 | — | — | — | — |
| Tunnel Guard Station | 8900’ | 15.6 | 23.4 | 150.3 | 23.5 | 22.8 |
| Wet Meadows | 8950’ | 30.3 | 40.3 | 133.0 | 40.3 | 38.4 |
| Casa Vieja Meadows | 8300’ | 20.9 | 30.0 | 143.4 | 32.6 | 29.6 |
| Beach Meadows | 7650’ | 11.0 | — | — | — | — |
| **SURPRISE VALLEY AREA** | | | | | | |
| Dismal Swamp | 7050’ | 29.2 | 30.4 | 104.1 | 29.7 | 26.5 |
| **TRUCKEE RIVER** | | | | | | |
| Independence Lake | 8450’ | 41.4 | 48.2 | 116.4 | 48.2 | 45.6 |
| Big Meadows | 8700’ | 25.7 | 26.2 | 101.9 | 26.1 | 24.0 |
| Squaw Valley | 8200’ | 46.5 | 49.2 | 105.8 | 49.2 | 45.1 |
| Independence Camp | 7000’ | 21.8 | 20.8 | 95.4 | 20.7 | 19.3 |
| Independence Creek | 6500’ | 12.7 | 21.3 | 167.7 | 21.2 | 19.8 |
| Truckee 2 | 6400’ | 14.3 | 28.1 | 196.5 | 28.0 | 25.8 |
| **LAKE TAHOE BASIN** | | | | | | |
| Mount Rose Ski Area | 8900’ | 38.5 | 40.4 | 104.9 | 40.4 | 37.2 |
| Heavenly Valley | 8800’ | 28.1 | 32.2 | 114.6 | 32.1 | 29.9 |
| Hagans Meadow | 8000’ | 16.5 | 24.2 | 146.7 | 24.1 | 22.3 |
| Marlette Lake | 8000’ | 21.1 | 33.2 | 157.3 | 33.3 | 29.7 |
| Echo Peak 5 | 7800’ | 39.5 | 52.7 | 133.4 | 52.8 | 48.5 |
| Rubicon Peak 2 | 7500’ | 29.1 | 31.8 | 109.3 | 31.5 | 29.1 |
| Tahoe City Cross | 6750’ | 16.0 | 20.3 | 126.9 | 20.5 | 19.5 |
| Ward Creek 3 | 6750’ | 39.4 | 46.3 | 117.5 | 46.4 | 41.9 |
| Fallen Leaf Lake | 6250’ | 7.0 | 14.1 | 201.4 | 14.3 | 14.6 |
| **CARSON RIVER** | | | | | | |
| Ebbetts Pass | 8700’ | 38.8 | 40.4 | 104.1 | 40.5 | 36.8 |
| Horse Meadow | 8557’ | — | 27.5 | — | 27.4 | 25.1 |
| Burnside Lake | 8129’ | — | 34.1 | — | 34.2 | 31.5 |
| Forestdale Creek | 8017’ | — | 45.9 | — | 45.8 | 41.9 |
| Poison Flat | 7900’ | 16.2 | 16.6 | 102.5 | 16.6 | 15.2 |
| Monitor Pass | 8350’ | — | 19.5 | — | 19.5 | 17.8 |
| Spratt Creek | 6150’ | 4.5 | — | — | — | — |
| **WALKER RIVER** | | | | | | |
| Leavitt Lake | 9600’ | — | 60.7 | — | 60.6 | 56.2 |
| Summit Meadow | 9313’ | — | 27.6 | — | 27.4 | 25.1 |
| Virginia Lakes | 9300’ | 20.3 | 19.8 | 97.5 | 19.6 | 18.7 |
| Lobdell Lake | 9200’ | 17.3 | 24.2 | 139.9 | 24.1 | 21.8 |
| Sonora Pass Bridge | 8750’ | 26.0 | 29.3 | 112.7 | 29.2 | 26.5 |
| Leavitt Meadows | 7200’ | 8.0 | 18.8 | 235.0 | 18.7 | 17.5 |
| **OWENS RIVER/MONO LAKE** | | | | | | |
| Gem Pass | 10750’ | 31.7 | 41.1 | 129.6 | 41.0 | 38.9 |
| Sawmill | 10200’ | 19.4 | 17.2 | 88.9 | 17.4 | 17.4 |
| Cottonwood Lakes | 10150’ | 11.6 | 19.1 | 164.7 | 19.2 | 18.8 |
| Big Pine Creek | 9800’ | 17.9 | 31.7 | 176.9 | 31.6 | 27.2 |
| South Lake | 9600’ | 16.0 | 25.9 | 162.0 | 25.9 | 25.0 |
| Mammoth Pass | 9300’ | 42.4 | 46.0 | 108.4 | 45.7 | 42.7 |
| Rock Creek Lakes | 9700’ | 14.0 | 23.2 | 165.5 | 23.1 | 21.6 |

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

| AREA | JANUARY | FEBRUARY | MARCH | APRIL | MAY |
|---|---|---|---|---|---|
| Central Valley North | 45% | 70% | 90% | 100% | 75% |
| Central Valley South | 45% | 65% | 85% | 100% | 80% |
| North Coast | 40% | 60% | 85% | 100% | 80% |




## SNOWLINES

**The 79th Western Snow Conference (WSC)** annual meeting will be held in South Lake Tahoe April 18-21. This meeting will be hosted by the South Pacific Region. Don't miss out on an opportunity to attend this meeting of the premier organization devoted to the study of snow and runoff. Further information is at http://www.westernsnowconference.org/ or contact Frank Gehrke 916-574-2635. The short course on Monday “Precipitation Runoff Modeling System Overview & Use, Presented as a Case Study: California's Feather River” is particularly germane to water management

**Depicted** on this month's cover is a National Park Service snow gauger surveying the Farewell Gap snow sensor following an avalanche in early January. Photo taken January 28, 2011